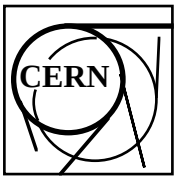

EUROPEAN LABORATORY FOR PARTICLES PHYSICS

CERN/SPSLC 96-26
SPSLC 28
3 April 1996

SPS AND LEAR EXPERIMENTS COMMITTEE

Decisions taken at the 28th meeting on 26-27 March 1996

CLOSED SESSION

Present: P. Bagnaia, J.-P. Blaizot*, M. Cavalli-Sforza, F. Close, B. D'Almagne (Chairman), M. Doser, D. Drijard (Secretary), K. Ellis, A. Faugier* (replacing K. H. Kissler), L. Foà, B. Gavela, G. Goggi, P. Grafström, K. Green, J.-F. Grivaz*, K. Hübner, D. Jacobs, K. Jakobs, K. Königsmann*, R. Landua, J. Nassalski, A. Norton, L. Ristori, J.-P. Riunaud, A. Schopper, D. Simon, J. Stachel, M. Tyndel, G. Wilquet.

* part-time

Apologies: K. H. Kissler, K. Peters, J. Tuominiemi.

1. Approval of the minutes:

The minutes of the 28th meeting were approved without modification.

2. Report on the last meeting of the Research Board:

The recommendations of the SPSLC had been endorsed by the Research Board, namely the proposals **P293**, **P294** and **P284** for which the code numbers will be **NA55**, **NA56** and **PS212** respectively. The approval of **DIRAC**, the latter experiment, had been given under the condition that its preparation be monitored by the SPSLC and the construction of the required beam-line be decided by the Research Board following a recommendation from the SPSLC by the end of 1997. The West Hall's beams X7 and X5 would be kept in operation after the closure of the area, the latter in an upgraded form.

The Director of Accelerators indicated that a decision about the construction of the beam-line for DIRAC should be made by the end of 1996 to have it available for 1998. The committee decided that it would discuss this matter at the end of 1996, on the basis of a report from the referee, in order to make a recommendation to the Research Board.

3. Status report on SPS:

Some modifications of the SPS had been done during the shutdown such as the TT10 realignment, an improved measurement device for the beam profile in the injection line and a centralized "North West" control centre near the Prévessin Control Room. The real start-up of the SPS with beam happened during the day of the meeting. The aim was to run

smoothly through the Easter weekend, but there was still a critical day to be taken before the end of March.

4. Status report on LEAR:

The first protons had been sent to the AA on Monday. The slow extraction had been tested. The overall situation of the PS complex was very good. Tests with heavy-ions for the LHC were to be made before Easter.

5. Heavy-ions discussions at the June meeting:

There will be a comprehensive review of the heavy-ion experiments at the meeting next June. The organisation of the talks was discussed at length. It was decided that the experiments involved would give a status report and that review talks would as well be given during the open session.

6. Reports on the open session:

6.1 Physics projects for the Antiproton Decelerator

The referee presented an extensive survey of the subject of the antiproton source. The machine could deliver 10^7 $\bar{p}$ every minute in pulses of 200-500nsec. There would be only a fast extraction and no beam splitting, so that only one experiment would run at a time. The committee received five letters of intent and one memorandum on the physics which could be done with this machine. The physics programme was deemed important and worth being undertaken, in particular antihydrogen production to test CPT , to study anti-matter gravity even at a moderate precision, and to study the physics of exotic atoms. The ultimate precision one may obtain from spectroscopy of antihydrogen is possibly 10^{-18} but the level of 10^{-15} now considered reachable is already very interesting since the other checks on baryons and leptons are at the levels of 10^{-9} and 10^{-12} respectively. The committee decided to **recommend** the Antiproton Decelerator project to the Research Board.

6.2 COMPASS

The referees presented their views on both the experimental design and the theoretical justifications of the experiment proposed. The physics programme was considered of great interest, but quantitative estimates were requested about a few channels to check the competitivity of the experiment. The detector was found challenging, in many components fairly sophisticated, though probably doable. The committee requested the referees to continue discussions with the collaboration to clarify some of the points and collect details about the planning. It asked as well that the computing requirements be studied by the CN Division. The information gathered so far will be brought to the attention of the Research Board at its next session.

6.3 NOMAD

The project for an instrumented target was discussed by the referee. The increase in sensitivity of the final target, if realized, would be one order of magnitude after four years of running as compared to the current set-up. The committee accepted that the prototype be constructed but implied no commitment whatsoever towards a final project.

6.4 EMU12

The committee decided that an "emulsion run" would be planned for the Pb-ion run in 1996. The status report and beam-time request of the experiment EMU12 will be discussed at the meeting next June, together with the other similar beam-time requests, by the referee for these experiments. He will present as well a draft of the practical organisation of this run prepared by the co-ordinator of the emulsions.

7. PS test-beam requests:

The co-ordinator discussed test-beam time requests for the PS. Seven weeks were requested by DIRAC (PS212) to test their prototypes (drift chambers, MSGC, hodoscopes and scintillating fibres) and this should fit in the schedule. The committee accepted the recommendation and encouraged the collaboration to carry out these tests promptly in view of the tight schedule. The proposal P296, which is to measure the characteristics of a particle detector to be launched in space, asked for 3 to 8 weeks of parasitic time. The committee agreed to allocate 4 weeks of parasitic time and 1/2 week as main user for setting-up.

8. Update of the SPS schedule for 1996:

The co-ordinator presented an updated version of the SPS schedule. The Pb-ion run in 1997 was discussed and the committee decided that it would not occur at the beginning of the year.

9. Any other business:

The 29th meeting will be held on **Tuesday 4** and **Wednesday 5 June 1996**

The 30th meeting will be held on **Tuesday 10** and **Wednesday 11 September 1996**

10. Documents received:

A proposal for optimization study of a scintillation counters Time-of-Flight system for the AMS space experiment: SPSLC 96-13/P296.

COMPASS: A proposal for a COmmon Muon Proton Apparatus for Strusture and Spectroscopy: SPSLC 96-14/P297.

Proposal of exposures of nuclear track detectors to the Lead ions at the CERN-SPS:

SPSLC 96-15/P298.

Multiplicity and angular measurements of particles produced in Pb-Emulsion interaction at 160 A GeV: SPSLC 96-21/P299.

Fundamental studies of the antiproton at the AD: High precision spectroscopy of antiprotonic Helium atomcules as a window on the antiparticle world: SPSLC 96-12/I207.

Antihydrogen production and spectroscopy: SPSLC 96-16/I208.

Measurements of ionization in collisions between slow antiprotons and atoms:

SPSLC 96-18/I209.

Positron trapping and accumulation for experiments with antihydrogen:

SPSLC 96-19/I210.

The production and study of cold antihydrogen(PS196): SPSLC 96-23/I211.

Request for beam time for the experiment EMU12 at the heavy ion run in November-December 1996 at the SPS: SPSLC 96-20/M576.

Study of particle production and nuclear fragmentation in relativistic heavy-ion collisions in nuclear emulsions (EMU08, EMU11): SPSLC 96-22/M577.

Memorandum from the DIRAC collaboration (PS212): SPSLC 96-24/M578.

In flight spectroscopy of antihydrogen at the proposed antiproton facility AD:

SPSLC 96-25/M579.

D. Drijard